

# *Project Baseline Summary Report*

Data Source: **EM CDB**  
Operations/Field Office: **Albuquerque**  
Site Summary Level: **Pantex Plant**  
Project **AL015 / Pantex Waste Operations**

Report Number: **GEN-01b**  
Print Date: **3/9/2000**  
HQ ID: **0593**

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## **General Project Information**

### **Project Description Narratives**

#### **Purpose, Scope, and Technical Approach:**

Definition of Scope: The primary objective of the Pantex Waste Management Program is to provide for safe compliant management of Pantex-generated waste within available funding and with no loss of production due to waste management concerns. Treatment, storage, and disposal operations at Pantex are organized and implemented to maintain the lowest inventory possible of hazardous wastes resulting from mission activities while adhering to all applicable permits and federal and state regulatory requirements. Waste Management support includes program management, project and fiscal management, waste characterization, regulatory compliance support, and permitting activities. Waste Operations support is accomplished by providing a trained staff and a coordinated supply of resources necessary to accumulate and manage waste generated, transport waste on-site from generation locations to appropriate storage and/or treatment facilities, store waste prior to on-site treatment or off-site shipment, ship/manifest waste to authorized treatment/storage/disposal (TSD) facilities, and track waste from generation to final disposal. The work off of legacy Mixed Low-Level Waste is scheduled to be completed prior to FY2000 and the work of legacy Low-Level Radioactive waste is scheduled to be completed prior to FY2004. In FY1998, approximately 10% of the work load is associated with the work off of legacy waste and approximately 90% of the work load is associated with the ongoing mission.

Technical Approach: The foundation of the program is a strong technical oversight program that has been implemented to ensure the compliant management of waste from cradle to grave. The cornerstone of the Pantex Waste Management Program is an effective pollution prevention program aimed at eliminating or minimizing the generation of waste. Waste generating processes are identified and prioritized based on risk to the site worker, the public, and the environment. Waste management compliance practices are identified and implemented prior to waste generation. Wastes are monitored for compliant treatment and storage on-site, and monitored prior to shipment to ensure compliance with receiving facilities' waste acceptance criteria. Oversight functions include waste characterization, surveillances, facility review, contractor oversight, and off-site TSD audit. Hazardous waste, when received from the generator, is staged for shipment or treated on-site within regulatory time constraints listed in Title 40 Code of Federal Regulations. Time factors dealing with the shipment of hazardous waste for disposal at off-site commercial facilities is, for the most part, dependent on accumulating sufficient quantities of specific profiles for a cost effective shipment. The reduction in mixed waste inventory is defined in the Pantex Plant Site Treatment Plan and in the Mixed Waste Program Plan as previously presented to and approved by DOE and regulatory authorities. Approved mixed low-level waste streams are treated and disposed at off-site commercial facilities. Those MLLW streams not approved for treatment and disposal at commercial off-site facilities are stored on-site in RCRA permitted facilities. Twenty-one low-level waste streams comprising currently generated and "legacy" waste inventory have been identified for disposition. Six of the waste streams are currently approved for disposal at the Nevada Test Site and two waste streams are pending NTS approval. Eleven waste streams are being evaluated as candidates for disposal at the Nevada Test Site (NTS) or at other commercial facilities. NTS is the preferred option for disposal of LLW.

#### **Project Status in FY 2006:**

Waste Management operations will continue beyond FY2006 to handle all newly generated waste at Pantex; however, EM plans call for the generators to begin paying for all newly generated waste no later than FY2000, possibly in FY1999. These plans are contingent upon agreement between Environmental Management and Defense Programs. Mixed Low-Level Radioactive legacy waste will have been worked off prior to the end of FY2000 and Low-Level Radioactive legacy waste will have been worked off prior to the end of FY2004.

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## **Project Description Narratives**

### **Post-2006 Project Scope:**

Waste Management operations will continue to handle all newly generated waste at the Pantex Plant.

### **Project End State**

Beginning in FY1999, Waste Operations at the Pantex Plant was transferred to the Landlord Program. The transfer was made in order to reduce the overall life-cycle costs of waste operations.

Waste Management operations will continue as long as the Pantex Plant mission continues. Waste Management will continue to handle all newly generated waste at Pantex as a service to waste generators indefinitely. Two facilities will be transitioned back to the Landlord.

### **Cost Baseline Comments:**

NOTE: Reference A.4.b III Mixed Low-Level Waste - Baseline budgeting is based on waste forecasts. Future forecasts will differ from the baseline due to characterization and new treatment options.

The project cost estimate is based upon Activity-Based Cost Estimating (ABC). Cost estimates for disposal are based on the unit cost data developed in FY1996. Costs increase from FY1997 to FY1998 due to a change in the overhead rate and allocation methodology. Escalation rates used are 2.7% per year for FY1998 through FY2006, but costs for FY2007 and out were flatlined at constant FY2006 dollars. Included in the cost estimates are the following:

RCRA Closure of an existing firing range - FY00 - \$2 million (included in Program Mgmt in Site Summary Level - Part B)  
Facility Upgrades FY2000-FY2002 - \$500K per year (included in Program Mgmt in Site Summary Level - Part B)

### **Safety & Health Hazards:**

This information can be found in the Pantex Plant Environment, Safety & Health (ES&H) Budget Formulation Plan.

### **Safety & Health Work Performance:**

This information can be found in the Pantex Plant ES&H Budget Formulation Plan.

### **PBS Comments:**

Pantex is currently in the design stage of a new Hazardous Waste Treatment and Processing Facility (HWTTPF) in which hazardous, LLW, and MLLW will be treated and processed. The facility will provide the safety envelope needed to perform these treatment and processing activities and protect the site worker, the public, and the environment. Currently plans call for the completion of construction in FY1999. Waste Management operations will continue as long as the Pantex Plant mission continues. Pantex currently has plans to dispose of all legacy mixed low-level radioactive waste in accordance with the approved FFCA compliance plan. Pantex expects that commercial treatment and disposal options will be available to meet the FY2000 goal.

### **Baseline Validation Narrative:**

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## Project Description Narratives

All TSD information contained in this plan and in the FY98 Waste Management Baseline received concurrent review and approval of the Waste Operations and Waste Management departments. The FY98 Waste Management Baseline has been reviewed and approved by DOE-AAO and DOE-AL and is consistent with the WMD Data Dictionary.

## General PBS Information

**Project Validated?** Yes **Date Validated:** 10/1/1997  
**Has Headquarters reviewed and approved project?** No  
**Date Project was Added:** 12/1/1997  
**Baseline Submission Date:** 7/1/1999  
**FEDPLAN Project?** Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	N	Y	Y	N	N	Y	Y	Y

## Project Identification Information

**DOE Project Manager:** Laura Pendlebury  
**DOE Project Manager Phone Number:** 806-477-3177  
**DOE Project Manager Fax Number:** 806-477-6972  
**DOE Project Manager e-mail address:** lpendleb@pantex.doe.gov  
**Is this a High Visibility Project (Y/N):**

## Planning Section

### Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	22,127	0	22,127	12,875	12,875	9,252	9,252		0	0	0	0	0	0	0

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## Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (constant 1999 dollars)	22,127	0	22,127	12,875	12,875	9,252	9,252		0	0	0	0	0	0	0	
PBS EM Baseline (current year dollars)	22,127	0	22,127	12,875	12,875	9,252	9,252		0	0	0	0	0	0	0	
PBS EM Baseline (constant 1999 dollars)	22,127	0	22,127	12,875	12,875	9,252	9,252		0	0	0	0	0	0	0	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%		2.70%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070

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2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

## Project Reconciliation

### Project Completion Date Changes:

Previously Projected End Date of Project:

Current Projected End Date of Project: 9/30/1998

Explanation of Project Completion Date Difference (if applicable):

### Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	28,418	Actual 1997 Cost:	12,875	Actual 1998 Cost:	9,252
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	6,291	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			170
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	6,461				

### Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):	6,461	The Waste Ops Program was transferred from EM to the Landlord Program in FY1999.
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	0	
Additional Amount to Reconcile (+):	0	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	0	

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## Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Transfer program to Defense Programs			9/30/1998								
Initiate Transition Activities			1/15/1996								
Mission Milestone			9/30/1998								

## Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Transfer program to Defense Programs					Y						Management and funding responsibility will transfer to DP in FY 1999
Initiate Transition Activities				Y							Initiate transition activities, including planning, and implementation.
Mission Milestone						Y					The waste management mission transfer to DP Programs

## Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
Fac.														
Decom.- Assess.	NF	0.00	2.00	2.00										
Fac.														
Decom- Cleanup	NF	0.00	2.00	2.00										
MLLW														
Treatment	M3	0.00	0.00	0.00	0.00		0.00	0.00						

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## Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
MLLW														
Storage	M3							75.15						
MLLW														
Comm. Disp.	M3	0.00	0.00	0.00	0.00		0.00	0.00						
MLLW														
Ship to DOE Disp.	M3	0.00	0.00	0.00	0.00		0.00							
LLW														
Treatment	M3	67.93	0.00	67.93	0.00		0.00	67.93						
LLW														
Storage	M3							182.61						
LLW														
Comm. Disp.	M3	0.00	0.00	0.00	0.00		0.00	0.00						
LLW														
Ship to DOE Disp.	M3	374.55	0.00	374.55	0.00		0.00	374.55						
Haz.														
Commercial	MT	0.00	0.00	0.00	0.00		0.00							
Rem. Waste														
Disposed	M3	0.00	0.00	0.00	0.00		0.00							
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	
Fac.														
Decom.- Assess.	NF						2.00							

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Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
<b>Fac.</b>													
<b>Decom- Cleanup</b>	NF							2.00					
<b>MLLW</b>													
<b>Treatment</b>	M3												
<b>MLLW</b>													
<b>Storage</b>	M3												
<b>MLLW</b>													
<b>Comm. Disp.</b>	M3												
<b>MLLW</b>													
<b>Ship to DOE Disp.</b>	M3												
<b>LLW</b>													
<b>Treatment</b>	M3												
<b>LLW</b>													
<b>Storage</b>	M3												
<b>LLW</b>													
<b>Comm. Disp.</b>	M3												
<b>LLW</b>													
<b>Ship to DOE Disp.</b>	M3												
<b>Haz.</b>													
<b>Commercial</b>	MT												
<b>Rem. Waste</b>													
<b>Disposed</b>	M3												
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total			

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Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
<b>Fac.</b>										
<b>Decom.- Assess.</b>	NF									2.00
<b>Fac.</b>										
<b>Decom- Cleanup</b>	NF									2.00
<b>MLLW</b>										
<b>Treatment</b>	M3									23.50
<b>MLLW</b>										
<b>Storage</b>	M3									
<b>MLLW</b>										
<b>Comm. Disp.</b>	M3									0.00
<b>MLLW</b>										
<b>Ship to DOE Disp.</b>	M3									0.00
<b>LLW</b>										
<b>Treatment</b>	M3									51.40
<b>LLW</b>										
<b>Storage</b>	M3									
<b>LLW</b>										
<b>Comm. Disp.</b>	M3									0.00
<b>LLW</b>										
<b>Ship to DOE Disp.</b>	M3									360.40
<b>Haz.</b>										
<b>Commercial</b>	MT									227.20
<b>Rem. Waste</b>										
<b>Disposed</b>	M3									0.00

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## Facility Decommissioning

Site Code	RSF ID	Change Flag	Description	Class/Subclass	Hazard	Plan. Assess. Year	Fore. Assess. Year	Actual Assess. Date	Plan. Deac. Year	Fore. Deac. Year	Actual Deac. Date	Plan. Comp. Year	Fore. Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
PAPL	0254		Building 11-7	\		2009	2009					2010	2010			N		
PAPL	0255		Building 11-9	\		2009	2009					2010	2010			N		

## Technology Needs

Site Need Code: AL-07-06-01-MW

Site Need Name: Advanced Methods for Destruction of 1,3,5-Triamino-2,4,6-Trinitrobenzene (TATB) High Explosive

Focus Area Work Package ID: MW-08

Focus Area Work Package: Facilitating Deployment for Unique Wastes

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Base Hydrolysis

Site Need Code: AL-08-06-04-MW

Site Need Name: Enzyme-Based Method for Destruction of 1,3,5-Triamino-2,4,6-Trinitrobenzene (TATB) and 2,4,6-Trinitrophenylmethylnitramine (Tetryl) Bulk High Explosive.

Focus Area Work Package ID: MW-08

Focus Area Work Package: Facilitating Deployment for Unique Wastes

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Base Hydrolysis

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## Technology Needs

**Site Need Code:** AL-08-06-02-DD

**Site Need Name:** Decontamination of Concrete Surfaces Contaminated with Radionuclides and High Explosive Materials Using Microbially Influenced Degradation (MID)

**Focus Area Work Package ID:** DD-12

**Focus Area Work Package:** D&D of Weapons Components Fabrication Facilities

**Focus Area:** DDFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Both

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Biodegradation of Concrete

**Site Need Code:** AL-07-06-03-MW

**Site Need Name:** Pollution Prevention via Thermal Processing of Materials in Inventory

**Focus Area Work Package ID:** MW-08

**Focus Area Work Package:** Facilitating Deployment for Unique Wastes

**Focus Area:** MWFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Risk Reduction

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Graphite Electrode DC Arc Furnace

**Site Need Code:** AL-08-06-05-MW

**Site Need Name:** Catalyzed Electrochemical Oxidation of Organic Waste, Bulk High Explosives (HE), and HE Waste Streams

**Focus Area Work Package ID:** MW-08

**Focus Area Work Package:** Facilitating Deployment for Unique Wastes

**Focus Area:** MWFA

**Agree with Technology Link:** Y

**Benefits (Cost, Risk Reduction, Both):** Risk Reduction

### Technologies

### Cost Savings (in thousands of dollars)

### Range of Estimate

Base Hydrolysis

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## Technology Needs

Site Need Code: AL-07-06-04-SC

Site Need Name: In Situ Remediation Of HE, Solvents, VOCs, SVOCs, Heavy Metals, And Landfill Materials

Focus Area Work Package ID: SS-07

Focus Area Work Package: Vadose Zone Treatment Systems

Focus Area: SCFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

### Technologies

In Situ Soil Flushing Technology for Mobilization, Extraction and Removal of Metals and Radionuclides

Remediation of HE Contaminated Soils

### Cost Savings (in thousands of dollars)

2,214

### Range of Estimate

High

### Related CCP Milestones

### Related Waste Streams

01343: 1232 - Non-Regulated Class I Soils/Sediments

### Agree?

Y

### Change?

N